Exhibit C

NEW Water
The brand of the Green Bay Metropolitan Sewerage District

January 23, 2020

Ms. Tania Taff
Air Management Engineer – Division of Environmental Management
Wisconsin Department of Natural Resources
2984 Shawano Ave
Green Bay, WI 54313-6727

RE: Testing for emissions of mercury from I08 without use of granulated activated carbon

Dear Ms. Taff:

The purpose of this letter is to submit and discuss results for emissions testing that Green Bay Metropolitan Sewerage District (GBMSD) has opted to conduct on Process I08, the fluid bed incinerator.

Background

In 2018, GBMSD began operation of a new fluid bed incinerator (FBI) that is subject to 40 CFR 60, Subpart LLLL, Standards of Performance for New Sewage Sludge Incineration Units, which include limits for mercury emissions. GBMSD installed a granulated activated carbon (GAC) unit to control mercury emissions, if needed, to meet the new limits. Compliance emissions testing in October 2018 and May 2019 demonstrated that mercury emissions have been within the limits while operating the GAC.

A malfunction that occurred on November 7, 2019, described in a written report to the United States Environmental Protection Agency (US EPA) dated December 31, 2019, left the GAC inoperable. GBMSD implemented numerous alternative options for managing sludge, but after several weeks, determined that the ability to treat wastewater effectively would be compromised without incinerating some sewage sludge. As such, limited incineration of sewage sludge without the GAC began on November 21, 2019.

To measure the mercury emission rate and evaluate the potential impacts of operating without the GAC, GBMSD conduct an emission test on December 12, 2019. All other emission control systems, (the combustion chamber temperature, a wet electrostatic precipitator, and scrubber) operate in accordance with their respective allowable operating parameters whenever the FBI is operated, including during the emission test. The enclosed report contains the results from that testing, which was conducted by Advanced Industrial Resources, Inc. Results show that the allowable mercury concentration exceeded the Subpart LLLL limit for new fluid bed incinerators while incinerating sewage sludge without operating the GAC.

While operating the FBI without the GAC might exceed the allowable mercury concentration, it does not pose a significant risk to the public. An air dispersion modeling evaluation was conducted by using the measured mercury emission rate without the GAC and comparing the results with health-based standards. The evaluation demonstrates that the impacts from the emission rate are well within state health-based standards. This evaluation is discussed in detail below.

Discussion

GBMSD conducted an emission test on December 12, 2019 to determine the mercury emission rate from the FBI without the GAC operating. The sludge feed rate during the test averaged 1.81 dry tons per hour, which is 85% of the 51 dry tons per 24-hour day capacity.

The measured mercury emission concentration from the December 12, 2019 test was 0.0220 milligrams per cubic meter (mg/m^3) corrected to 7% oxygen. While this emission concentration exceeds the Subpart LLLL emission limit, it meets several other standards, including the Subpart LLLL limit for new multiple hearth sewage sludge incinerators, as well as existing fluid bed and multiple hearth sewage sludge incinerators (see 40 CFR 60 Subpart MMMM). The measured mercury emission rate was 0.000646 pounds per hour (lb/hr), which meets the National Emission Standard for Mercury (see 40 CFR 61 Subpart E). This emission rate also meets Wisconsin's air toxics emissions standards for mercury (see Wis. Admin. Code§ NR 445, Table A). Table 1 compares the measured concentration and emission rate without the GAC in operation with each of these federal and state standards.

Table 1 Comparison of Mercury Emission Rate without GAC with Federal and State Standards

Regulation	Numeric Standard	Equivalent Hourly Standard	GBMSD FBI without GAC[1]	Meets Standard, Percent
Federal Standards				
Subpart LLLL New Fluid Bed Incinerator	0.0010 mg/m^3 @ 7% O_2		0.0220 mg/m^3 @ 7% O_2	Exceeds Standard
Subpart LLLL New Multiple Hearth Incinerator	0.15 mg/m^3 @ 7% O_2		0.0220 mg/m^3 @ 7% O_2	15 %
Subpart MMMM Existing Fluid Bed Incinerator	0.037 mg/m^3 @ 7% O_2		0.0220 mg/m^3 @ 7% O_2	59 %
Subpart MMMM Existing Multiple Hearth Incinerator	0.28 mg/m^3 @ 7% O_2		0.0220 mg/m^3 @ 7% O_2	8 %
40 CFR 61 Subpart E Sludge Incineration Plants	7.1 lb/24-hr	0.30 lb/hr	0.000646 lb/hr	0.2 %
Wisconsin State Standards				
NR 446.20(2) Sludge Incineration Plants	7.1 lb/24-hr	0.30 lb/hr	0.000646 lb/hr	0.2 %
NR 445 Table A Mercury, Inorganic Stack Ht > 75 ft	1,838 lb/yr	0.21 lb/hr	0.000646 lb/hr	0.3 %
NR 445 Table A Mercury, Inorganic Stack Ht > 75 ft	0.0405 lb/hr		0.000646 lb/hr	2 %

To estimate potential impacts on human health from operating the FBI without the GAC, GBMSD contracted with Short Elliot Hendrickson Inc. to conduct air dispersion modeling to calculate potential off-site mercury concentrations and to compare those potential impacts with state health-based standards. The ambient air quality standards for mercury are shown in the Wisconsin Administrative Code, NR 445, Table A.

These standards are a 24-hour average[2] concentration of 0.6 micrograms per cubic meter (µg/m^3) and an annual[3] average concentration of 0.3 µg/m^3. The air dispersion modeling was conducted in accordance with Wisconsin Air Dispersion Modeling Guidelines and the federal Guideline on Air Quality Models (40 CFR 51 Appendix W). A memorandum documenting the air dispersion modeling completed is enclosed.

For evaluation of the 24-hour standard, the actual days the FBI has run without the GAC and is anticipated to run without the GAC (November 21, 2019 through January 31, 2020) were modeled using the 0.000646 lb/hr mercury emission rate. The resulting highest impact, 0.00187 µg/m^3 is about 0.3 % of the 24-hour standard.

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[1] The emission rate and emission concentration shown on this table are based on emission testing conducted at the GBMSD facility on December 12, 2019 without the operation of the GAC.

[2] Wisconsin's 24-hour standard is 2.4% of the mercury TLV the American Conference of Governmental Industrial Hygienists.

[3] Reference Concentration for Inhalation Exposure for mercury from EPA Integrated Risk Information System.

For the annual standard analysis, the FBI was modeled as "off' for the shutdown period (October 19, 2019 through November 20, 2019), "on" at 0.000646 lb/hr during the actual days when the FBI operated or is anticipated to operate without the GAC (intermittently from November 21, 2019 through January 31, 2020), and then "on" at the permitted mercury concentration rate for the remainder of the 365 day period (February 1 through October 18, 2020). The resulting impact, 0.00004 µg/m^3 is about 0.01% of the annual standard.

Table 2 – Modeling Results Compared with Ambient Air Standards for Mercury

Averaging Period	Modeled Concentration (µg/m^3)	Ambient Standard (µg/m^3)	*% of Standard*
24-hr	0.00187	*0.6*	*0.3%*
Annual	0.00004	*0.3*	*0.01%*

While operating the FBI without the GAC might exceed the allowable mercury concentration, modeling indicates that it does not pose a significant risk to the public. The air dispersion modeling evaluation demonstrates that the impacts from the emission rate are well within state health-based standards.

Please feel free to contact Julie Maas by phone at (920) 438-1045 or email at jmaas@newwater.us with any questions or comments you may have.

Sincerely,

GREEN BAY METROPOLITAN SEWERAGE DISTRICT

Thomas W. Sigmund, P.E.
Executive Director

c. Louise Gross, US EPA
Daniel Schaufelberger, US EPA
James Bonar-Bridges, WDNR
Thomas Henning, SEH

Enclosures:
1: Advanced Industrial Resources Sewage Sludge Incineration Unit Emission Test Report – Test Date December 12, 2019
2: SEH Technical Memorandum – Analysis of impact of Mercury Emissions from FBI